

HOW THE BOSTON CON. WAS MADE A MINE



Boston Consolidated Porphyry Mine, Dec. 1, 1906. This Picture Shows How the Hill Is Being Stripped by the Steam Shovels.

Perched high on the shoulder of a hill that overlooks the mining camp of Bingham, a steam shovel is eating away a mountain. Little engines drawing trains of ore cars puff and pant and short along the grade. The people of Bingham call, with pride, the attention of visitors to the great work that is going on hundreds of feet above them and say: "That's the Boston Consolidated giving an object lesson in rapid mining. It beats the old way, doesn't it?"

It does beat the old way. It beats the old way as easily as the modern locomotive beats the stage coach of pioneering days, as easily as the telephone beats the pony express rider. Here is displayed the faith that literally picks up mountains and moves them away. But it is only one manifestation of the genius of a single man, Samuel Newhouse, a genius that knows, not only what should be done and how to do it, but how to get around him men who measure fully up to the mammoth tasks he sets them.

The story of the Boston Consolidated Mining company is a story that is not all rosy. Time was when it seemed, as though, after many thousands of dollars had been expended, the outlay and the attendant labor would come to naught. Superintendents and managers were discouraged. Work as they would they could not find ore bodies in volume sufficient to warrant a continuance of the work.

The one man who was undiscouraged was the man who had most at stake. That man was Samuel Newhouse. Mr. Newhouse knew the ore was there in paying quantities, he knew he had one of the greatest copper mines in the world. So he persevered. The first three years were years of discouragement, but the courage of Mr. Newhouse never flagged. In the beginning of the fourth year—the Boston Consolidated properties have been operated by Mr. Newhouse for six and one-half years—sulphide ores in quantity were discovered.

Other Ground Purchased.

Followed then the acquisition, as quietly as possible, of other prospects, including the porphyry mountain through which the steam shovel is eating its way. Nobody believed the porphyry could be made to pay. Its values in copper were very low and mining on the magnificent scale inaugurated by Mr. Newhouse and his general manager, Lafayette Hanchett, had not been dreamed of. Nor did Mr. Newhouse

and Mr. Hanchett begin work at once on the porphyry mine.

For some time they continued their development of the sulphide mine and their efforts were rewarded richly with almost every foot of the new and intelligent development work. During the last year three entirely new bodies of ore have been discovered in the sulphide mine, with values running from 6 to 24 per cent in copper, and with an average placed conservatively at 10 per cent. A single body of this rich ore is 60 feet thick, 140 feet long and 160 feet high, according to actual measurements.

So remarkable has been the development of the sulphide mine that money has been expended lavishly in its equipment. On the first day of the new year the mine will be equipped with a 200-horsepower electrically driven compressor, a motor generator set of fifty horsepower for driving the nine locomotives, and an additional locomotive. Other equipment, which will be used jointly for the sulphide and the porphyry mines, will be described later.

An idea of the work that has been done in the sulphide mine may be gained from the company's annual report, prepared after the close of business on Sept. 30, 1906. The production during the preceding twelve months is shown to have been 68,985 tons of sulphide ore, for which the smelters paid the company \$482,506.69.

This output could easily have been doubled, it is stated. If there had been adequate transportation service on the Copper Belt line. Because of the numerous disappointments relative to the handling of the ore, Mr. Newhouse authorized the purchase of a 30-ton Shea engine, which was placed in operation Dec. 15, and which will be used exclusively in the Boston Consolidated service. Since that time the output of sulphide ore has been 400 tons daily, and this will shortly be increased to 500 tons.

Six Miles of Development.

Development work in the sulphide mine during the year covered by the report aggregated 7,384 feet, making a total of 20,500 feet, or nearly 4½ miles, of underground workings. Of this total, 23.8 per cent was done in the twelve months under discussion, a showing that is probably not exceeded by any mine in the country, and that is probably equalled by only a few. Yet this is only a beginning. During the year that is about to begin the real work

will be inaugurated. It is expected that not far from 200,000 tons of sulphide ore will be shipped from the Boston Consolidated to the smelters during 1907.

But the spectacular feature of the Boston Consolidated work is found on the porphyry mountain which is being stripped down to the values that lie underneath. To Lafayette Hanchett belongs the credit of introducing steam shovels in mining in Utah. He installed the first one at the Cactus in February last. In June he had one perched up on the hillside at Bingham. Both shovels are the biggest and best of their kind that could be secured in the market.

They are what is known as the Panama canal type, because of the fact that the government is using shovels of this character in excavating the interoceanic ditch. An idea of the progress that is being made in the removal of the mountain at Bingham may be gained from the statement—that the shovel there takes seven and one-half tons at a "bite" and it bites three times per minute.

That is to say, operating at full speed and with no accidents or delays, it is possible to move 10,800 tons of dirt per day with the shovel. However, Mr. Hanchett is not attempting to make any such speed. He cuts the possibility of the shovel to get out 5,000 tons a day. This is just about the limit because with the engines and the track facilities in use it is not possible to handle more.

Reduced to figures, a train of ten cars is loaded every eight minutes, making sixty trainloads per day of eight hours. Each car contains seven and one-half tons, or 75 tons to the trainload. If anybody doesn't believe that is lifting the ground at a rate never before equalled in Utah he should look at a picture of the hill taken, say July 1, and then go up to Bingham and look at what is left of the hill now. A more remarkable monument to tireless human activity and ingenuity has rarely been seen. But the shovel does not do all of the work.

The Boston Consolidated uses a thousand pounds of blasting powder a day on its porphyry mine. The powder breaks up the ground and makes it possible for the steam shovel to handle it. The manner of using the powder is interesting. With Keystone drills of the churn type, each an independent unit working under and furnishing its own power, holes from 80 to 130 feet deep are driven into the ground at intervals of

forty feet across the ground it is desired to break.

Two fuses and primers and an electric primer are attached to each hole, thus making three possible methods of discharging the blast. When the holes have been filled and rammed they are set off, usually by electricity. Should there be any failure of this method the fuses are lighted, and then something does happen. There is nothing spectacular, however, in the blasting. People who go to see them, expecting to witness a tremendous upheaval, with rocks and debris shooting high in the air, are certain to be disappointed.

Lifting the Mountain-Side.

The writer saw 1,500 pounds of dynamite touched off at a single shot on the Boston Consolidated's porphyry mountain one day last summer. In his ignorance he looked for a convulsion of nature and a tremendous report. What he heard was a heaving, growling sound. What he saw was the side of the mountain lift perhaps a foot and then settle gently back. The reason is that the powder is given all the work it can do.

All of the work that is going on in the porphyry mine is not above ground. The annual report shows that there are 19,885 feet of underground workings, of which 12.25, or more than 61 per cent, was done during the twelve months covered by the report.

Now a word as to the general equipment of the Boston Consolidated properties at Bingham. A thirty-room boarding house for the shovel crew is in course of construction and will shortly be ready for occupancy. A machine shop, the most complete in the state, with the exceptions of possibly the railroad shops, is well under way. This shop will be designed for repairing the steam shovels when necessary, the locomotives and such other repair work, however heavy its character, as may be needed. A single item of the equipment is a steam hammer that weighs 1,500 pounds, the largest in Utah, and weighing, complete, thirty-five tons. It can strike a 7,000-pound blow, a blow that would crush a steel beam as if it were paper, or touch iron so lightly as barely to crack the shell.

A roundhouse capable of accommodating twelve locomotives is being built. The company has now nine locomotives in service, and two more are on the way. There are two of the ninety-five-ton shovels of the same character as the one whose working has already been described. Four and one-

half miles of railway track are in use for the shovel service, and early in the coming year it is expected that 3,000 tons of copper-bearing porphyry will be sent daily to the big new mill at Garfield.

Mill at Garfield.

That mill is worth a journey out to Garfield, incomplete though it is at the present time. Mr. Hanchett said the other day that, barring unusual and unreasonable delays in securing materials, he would put the mill in commission early in July. The mill, as is generally known, has a capacity of 3,000 tons per day. It is located conveniently on a tract of 730 acres of land purchased by Mr. Newhouse some time ago.

The building is to be 150 feet long and 320 feet wide, and the construction will be of steel throughout. When finished the mill structure will contain 3,400 tons of structural steel, and the cost will be upwards of \$325,000. Equipped and ready to begin operating it will represent an actual cash outlay of \$1,200,000.

The erection of the steel began Dec. 15. Forty-one carloads of steel are on hand and forty-six are known to be en route. In order to avoid any delay in the securing of the equipment, all of it has been ordered, and part of it, including twelve cases of stamps, are already on hand. Twenty more cases of stamps have been shipped. This mill, when finished, will contain everything that is absolutely modern and up to date in its branch of the mining industry.

Back of the mill building a great ore bin is in course of construction. This bin will be 200 feet long and thirty-six feet wide. Its capacity will be 12,000 tons, or a four-days' run for the mill. A building, that will house the great machine shop in the state, is also under way. It will be 150 feet long and forty-four feet wide, and every necessary tool needed for repairing the mill and other machinery will be installed. The superintendent, and an office building have already been erected.

The mill and the other machinery will be operated electrically by power furnished by the Telluride Power company over transformers and equipment calculated for 80,000 volts. That is just double the present Telluride limit, but there is a possibility that some time power will be brought to Salt Lake and Garfield from the Snake river, and the Boston Consolidated people are preparing for that.

Water for the mill and the rest of the buildings has been arranged for. It is being piped in from Droubay and E. R. springs, eleven miles from Garfield, near Glenville.

The Newhouse Mine.

Samuel Newhouse is interested in many mining companies. He has given his name to but one, the Newhouse company of Beaver county, where the Cactus and other great properties have been united in a corporation. Here, in the town of Newhouse, the model city laid out with as much care and forethought as it was possible to give to the undertaking.

While the stock market is not always an accurate index to the value of a property, for often fictitious values are created for stocks and, similarly, unfair methods of depreciating a security are used, the Newhouse stock is worth studying. Early in the year it sold around \$5 a share. It is now selling, at more than \$17 a share. The consistent rise in Newhouse stock has been caused by merit, and by merit alone.

Work has progressed rapidly on the properties during the year that is now about to close. The great steam shovel installed by Manager Lafayette Hanchett in February has been working steadily and rapidly ever since, stripping the surface of the deposits on the Cactus. Following this work sinking the Glory hole, which is known as the "glory hole," is simply the use of holes considerably larger than ordinary drill holes, with black powder. This loosens much more ground and makes its removal easier.

In August last a big new ore body was encountered on the fourth level of the Cactus. This ore has been rapidly developed on the fifth and sixth levels, thus revealing what is regarded by Mr. Hanchett and Mr. Newhouse as practically a new mine. Development of this ore body has resulted in the block-out of more than 1,000,000 tons of ore of a grade that is much higher than that in the older workings.

Preparations are now under way for sinking in this ore. For this purpose electric hoists are to be used. An additional boiler with a capacity of 300-horse power has been ordered and will arrive for installation in February. A second condensing plant is on the way, and ten more hoists have been added. In

the mill, making the total capacity of that plant 1,200 tons of ore per day.

December would have been the banner month at Newhouse had it not been for the coal shortage, but with all the difficulties encountered, or in spite of them, Mr. Hanchett is authority for the statement that the mine has been placed on a dividend earning basis.

The town itself has prospered also. The population has showed a steady increase, and at this time thirty new houses are under construction. There will be tenants for all of them by the time they are ready for occupancy.

TINTIC IRON COMPANY MAKES GOOD SHOWING

The Tintic Iron Mining company, which owns the Dragon iron mine at Tintic, is one of the good properties which has had a share in the unusually successful year which the camp has experienced during the past twelve months.

The mine is located on the other side of the hill near the big Mammoth mine, and the prospects of big returns are brighter now than they have been in some time. The company has been busy getting out the ore, and there are more than 500,000 tons recorded to the credit of the mine during the year.

600-Foot Shaft.

The shaft on the property is down 600 feet, and the company intends to sink two stations lower during the coming year, and possibly further. It is expected from the examinations which the engineers have made that the company will encounter larger bodies of ore than have heretofore been discovered in the mine.

Much development work has been done during the year on the property, and the results obtained have been highly satisfactory to the managers of the company, who have confidence in the hope expressed by former owners of the mine that there was a big body of ore in the mine.

Worked for Twenty Years.

The mine has been worked for more than twenty years, off and on, but the present activity in all of the mining camps, and especially at Tintic, has served as an impetus to the management of the company to lay out a plan of campaign which will be put into execution during the coming year.

The company has carried on an energetic campaign of development work which has been systematic during the year, and has obtained better results than were anticipated by the most enthusiastic supporters of the property during the year.

In Hands of Few.

The control of the company is in the hands of a few Salt Lake capitalists, who have spared nothing within reason to get the results which the engineers who have examined the property have said was in the mine. The campaign of development will be vigorously pushed during the year, and it is expected that by the time next December has rolled around again that there will be one of the best showings for the company on the books which has ever been known.

The officers of the company are: George Y. Wallace, president; L. E. Ritter, Jr., general manager, and directors, George Y. Wallace, Jr., and L. C. Ritter.

TINTIC MINING COMPANY HAS HAD A GOOD YEAR

Among the most successful of the mines in the Bingham camp is the Tintic Mining & Development company, which owns the Yampa mine in that district, which has for years been one of the best paying properties in the camp. Besides having one of the best mines in the camp, the company handles all of its own ores, which are treated at the Yampa smelter near the mine in Bingham.

The company is controlled by eastern capital mostly, and there is an even tenor of its way about everything connected with the company. It has been turning out some of the best ore in the district, but what the value of it is, and what are the immediate prospects for better results, is something which the management of the company keeps religiously to itself.

12,000 Tons a Month.

For the past year the company has been shipping about 12,000 tons of ore a month on an average, and this has been of the best ore in the camp. All of it has been treated at the smelter of the company at Bingham. The smelter is one of the best equipped of its kind in this part of the country, and has all

If the present prices of copper continue, and the experts predict an advance rather than a decline, Newhouse will be one of the most profitable mining corporations in all the world. And that the prices of copper will be maintained and improved upon is justified by the statistics. For it is pointed out that the production of copper is increasing at the rate of 5 per cent per year, while the consumption is increasing at the rate of 8½ per cent. If this ratio is continued, in just thirty years the world's stock of copper will be exhausted.

It can do to take care of the ore which is sent to it by the mines. Although there would probably be room for a custom business at the smelter, the company is content to take care of its own ore, and does not make any bid for the treating of the other outputs of the district.

The smelter has two blasts and a like number of reverberators and seven roasters. Besides the work of getting out the ore from the different levels, which has been pushed with energetic spirit during the year, the management of the company has done much in development work. The shaft, which is now sunk to the 1,200-foot level, will probably be sunk deeper during the coming year.

Pushing Work.

The company is always pushing ahead the work in the mines in order to keep up with the demands made upon it by the smelters, which often gets ahead of the output.

The officers of the company are all in New York and other parts of the east, and the management of the company is left to the men who are on the ground here and at Bingham.

The Tintic company goes on like the brook without babbling like that cool little stream, but getting there just the same and making few splashes in the mining world.

It is regarded by conservative mining men as one of the propositions which takes care of itself at all times and is an old reliable which can be depended upon for several years to come to give up all that there is to make the investment worth while.

REDUCED RATES

For Christmas Holidays,

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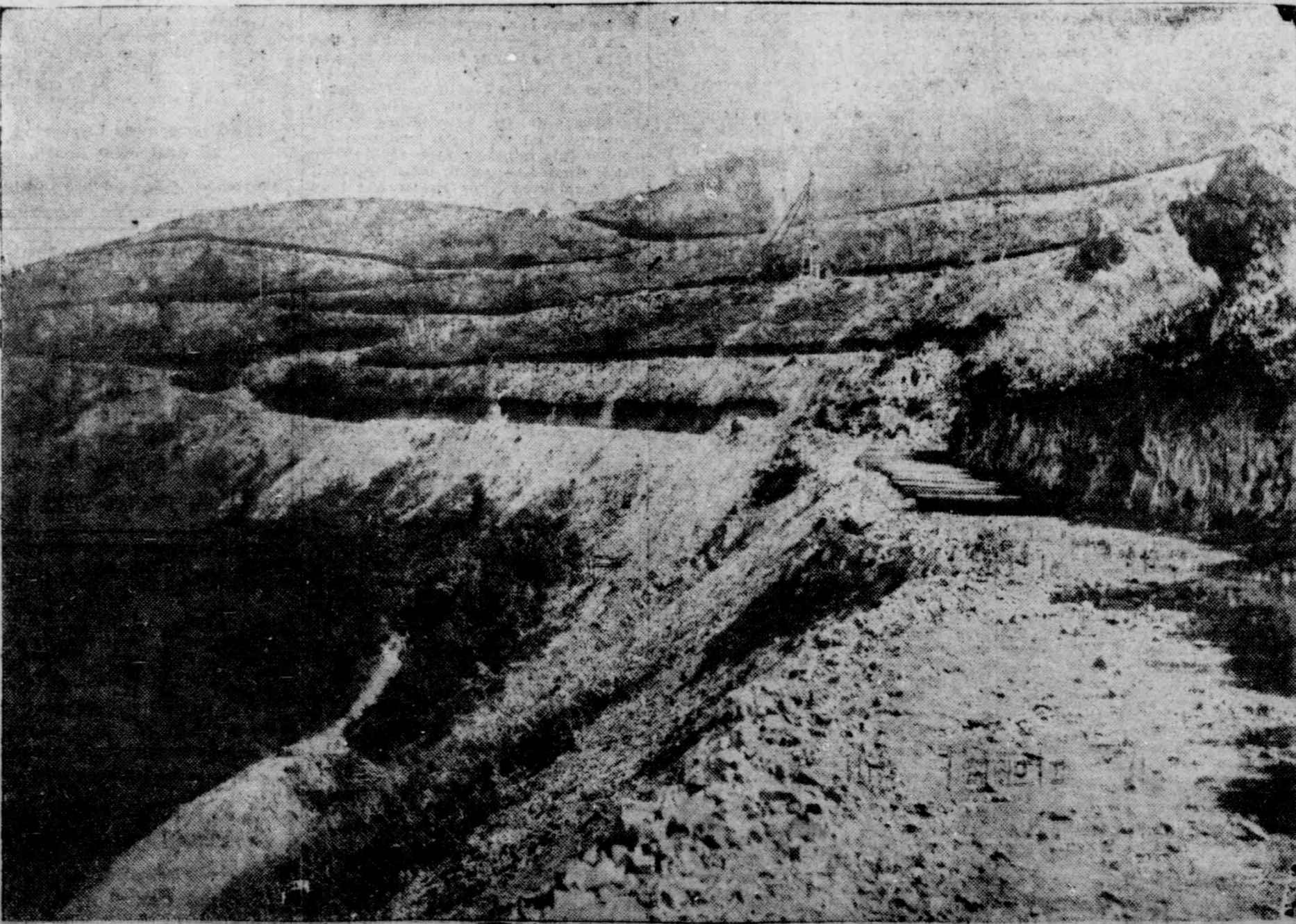
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Boston Consolidated Porphyry Mine, July 1, 1906